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NAVY review(s) completed.

## MEMORANDUM FOR THE FILE

17 September 1957

FROM: [REDACTED]

25X1A9A

SUBJECT: Navy D.F. Equipments

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1. On 16 September 1957, Messrs. [REDACTED] made a visit to the Countermeasures Branch, Design and Development Division, Bureau of Ships at the Main Navy Building to obtain the latest information on Navy Radio Direction Finding Equipment. Discussions were conducted in Room 3336 with Mr. Egan. To Mr. Egan we were representatives of CIA.

2. Mr. Egan gave us some information on a High Frequency Wellenweber system that is being developed by the University of Illinois. The antenna array will consist of 120 folded mono-poles spaced on the circumference of a circle having a diameter of 1000 ft. The receiver, indicator, and goniometer are being fabricated by Federal Telecommunications Laboratories. This equipment will be experimental and will cover the frequency range of 4 to 16 mcs., with the possibility of extending the range at a later date. Report information will be available early in 1958.

3. The AN/GRD-6 High Frequency equipment was discussed which is now standard shore installation equipment. Both good and bad results have been reported on this equipment, depending on site location and operating personnel. This equipment has a frequency range of 1.5 to 30 mcs. The antenna system consists of two arrays of 8 element "U" adcock, one for the 1.5 to 8 mcs. and the other for 8 to 30 mcs. Visual indication is on a 7 inch CRT and the type of reception is CW, MCW, ICW, or voice. The accuracy for the low band is less than 2 degrees and less than 2 1/2 degrees for the high band, with an average of 1 degree. The sensitivity for  $\pm$  2 degrees bearing swing is .5 to 1.5 microvolts/meter for the low and 1 or 2 microvolts/meter for the high band. The receiver selectivity in the narrow position is 2 kc. between the 3 db. points and on the wide position 5 kc. between the 3 db. points. This Direction Finding set is manufactured by Federal Telecommunications Laboratories, is available commercially and is known as the FTL-135A.

4. The other equipments discussed were:

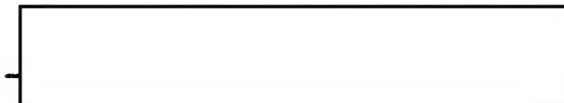
- a) CXRN 1.5 to 8 mcs., Transportable, 4 element "U" adcock
- b) CXRO 8 to 30 mcs., Transportable, 4 element "U" adcock
- c) AN/BLR-2 90 to 10750 mcs., Horn Type Antennas
- d) AN/SRD-6 100 kcs. to 100 mcs. Spaced loops
- e) AN/URD-2 100 to 156 mcs., fixed Shipboard Installation, crossed "H" adcock antenna

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- f) AN/URD-4 225 to 400 mcs., fixed Shipboard Installation, Crossed "H" adcock antenna
- g) AN/FLR-2 54 to 231 mcs., Yagi Antenna Array

5. The only equipments that may fill some of the Office of Communication's requirements are the AN/GRD-6, CXRN, CXRO High Frequency Direction Finding Sets and the AN/FLR-2 Very High Frequency Direction Finding Set. Additional information is being requested on this equipment through the OC-E Library.



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